

Remarks

Applicant's invention Switch-Capacitor Regulated Boost Converter and Inverter and US Patent 5,532,916 to Tamagawa's Voltage Converting Circuit and Multiphase Clock Generating Circuit Used for Driving the Same have some major differences.

The first difference is the number of charging and discharging clock cycles and phases. Number of charging/discharging clock cycles/phases for applicant is a 2-phase clock #120 to switch charging/discharging capacitors #340 and #320. Tamagawa uses a 4-phase clock Fig2A, Fig2B, Fig2C, and Fig2D to switch charging/discharging capacitors #17 and #18.

The second difference is the purpose of the flying capacitors. For applicant, capacitor #340 responsible to generate 2xVDD; and capacitor #320 responsible to generate -2xVDD. Tamagawa capacitors #17 and #18 are responsible to generate -2xVDD, and capacitor #17 responsible to generate 2xVDD.

The third difference is the number of MOSFETs devices required. For applicant, 7 MOSFETs devices: #280, #350, #360, #300, #290, #370, and #380 and 1 Diode device: #310. Tamagawa has 9 MOSFETs devices: #133, #135, #129, #131, #134, #136, #130, #132, and #137.